

=> s dimer acid and pentaerythritol and acrylic acid and di-trimethoylpropane and phthalic anhydride

92880 DIMER
3786340 ACID
2030 DIMER ACID
(DIMER(W) ACID)
23642 PENTAERYTHRITOL
39 ACRYLIC ACID
439837 DI
0 TRIMETHOYLPROPANE
0 DI-TRIMETHOYLPROPANE
(DI(W) TRIMETHOYLPROPANE)
46506 PHTHALIC
186680 ANHYDRIDE
26016 PHTHALIC ANHYDRIDE
(PHTHALIC(W) ANHYDRIDE)

L1 0 DIMER ACID AND PENTAERYTHRITOL AND ACRYLIC ACID AND DI-TRIMETHOYL
PROPANE AND PHTHALIC ANHYDRIDE

=> s dimer acid and pentaerythritol and acrylic acid and di-trimethoylpropane and phthalic anhydride

92880 DIMER
3786340 ACID
2030 DIMER ACID
(DIMER(W) ACID)
23642 PENTAERYTHRITOL
228168 ACRYLIC
3786340 ACID
99517 ACRYLIC ACID
(ACRYLIC(W) ACID)
439837 DI
0 TRIMETHOYLPROPANE
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(DI(W) TRIMETHOYLPROPANE)
46506 PHTHALIC
186680 ANHYDRIDE
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(PHTHALIC(W) ANHYDRIDE)

L2 0 DIMER ACID AND PENTAERYTHRITOL AND ACRYLIC ACID AND DI-TRIMETHOYL
LPROPANE AND PHTHALIC ANHYDRIDE

=> s polyols and polycarboxylic acid and acrylic acid

26245 POLYOLS
10947 POLYCARBOXYLIC
3786340 ACID
5647 POLYCARBOXYLIC ACID
(POLYCARBOXYLIC(W) ACID)
228168 ACRYLIC
3786340 ACID
99517 ACRYLIC ACID
(ACRYLIC(W) ACID)

L3 15 POLYOLS AND POLYCARBOXYLIC ACID AND ACRYLIC ACID

=> s polyols and polycarboxylic acid and acrylic acid and anhydride

26245 POLYOLS
10947 POLYCARBOXYLIC
3786340 ACID
5647 POLYCARBOXYLIC ACID
(POLYCARBOXYLIC(W) ACID)
228168 ACRYLIC
3786340 ACID
99517 ACRYLIC ACID
(ACRYLIC(W) ACID)
186680 ANHYDRIDE

L4 13 POLYOLS AND POLYCARBOXYLIC ACID AND ACRYLIC ACID AND ANHYDRIDE

=> s l4 and py<2001

20615125 PY<2001
L5 7 L4 AND PY<2001

=> d 1-7 ibib abs hitstr

L5 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:994432 CAPLUS
DOCUMENT NUMBER: 124:31962
TITLE: **Polyols** and polymers of unsaturated acids or
anhydrides in binding or coating compositions for
fibrous sheets
INVENTOR(S): Seyffer, Hermann; Rupaner, Robert; Guenther, Erhard;
Hummerich, Rainer
PATENT ASSIGNEE(S): BASF A.-G., Germany
SOURCE: Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 672720	A1	19950920	EP 1995-103372	19950309 <--
EP 672720	B1	19970723		
R: BE, DE, FR, GB, IT, NL				
DE 4408688	A1	19950921	DE 1994-4408688	19940315 <--
US 5536766	A	19960716	US 1995-404578	19950315 <--
PRIORITY APPLN. INFO.:		DE 1994-4408688	19940315	

AB A triazine ring-containing polyol [e.g., N,N',N''-tris(2-hydroxyethyl)melamine or THEIC] and a polymer of an unsatd. acid or **anhydride** [e.g., poly(methacrylic acid), **acrylic acid**-maleic acid copolymer, or acrylonitrile-Bu acrylate-methacrylic acid copolymer] are used in crosslinkable binding or coating compns. for fibrous materials such as nonwoven glass fiber fleeces. Fibrous materials bonded with the compns. are useful in asphalt shingles, floor coverings, filtering materials, battery separators, etc.

L5 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1989:77657 CAPLUS
DOCUMENT NUMBER: 110:77657
TITLE: Photocurable coating compositions and synthetic resin moldings using the same
INVENTOR(S): Kawakami, Shigenao; Jinno, Takuhiko; Takatsuka, Yasuo
PATENT ASSIGNEE(S): Koei Chemical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63168419	A2	19880712	JP 1986-311270	19861229 <--
JP 2583041	B2	19970219		

PRIORITY APPLN. INFO.: JP 1986-311270 19861229
OTHER SOURCE(S): MARPAT 110:77657
AB The title compns. forming hard, weather-, heat-, and abrasion-resistant flexible coatings with excellent adhesion on plastic moldings contain 20-75 parts polyfunctional monomer containing ≥ 4 OH groups, ≥ 3 of which are substituted by acryloyloxy groups, 10-60 parts ≥ 1 polyfunctional acrylate from dipentaerythritol, tripentaerythritol, ditrimethylolpropane, or ditrimethylolethane, dicarboxylic acids, and **acrylic acid**; polyester acrylate from pentaerythritol, tricarboxylic acids, and **acrylic acid**; and polyfunctional urethane acrylate from polyisocyanates and OH group-containing polymerizable acrylic monomers, and 3-40 parts difunctional acrylate $\text{CH}_2:\text{CHCO}(\text{OCHRCH}_2)\text{nOXCM}_2\text{XO}(\text{CH}_2\text{CHRO})\text{nCOCH}:\text{CH}_2$ (X = phenylene,

cyclohexylane; R = H, Me; n = 1-5), and this mixture (100 parts) also contain 0.01-5 parts hindered cyclic amine-type light stabilizer and 0.01-5 parts antioxidant. A composition from dipentaerythritol hexaacrylate 20, 0.5:0.26:2.0 (molar) dipentaerythritol-hexahydrophthalic **anhydride-acrylic acid** ester 20, bisphenol A ethoxylate diacrylate 10, 50:50 isopropanol-toluene 50, 1-hydroxycyclohexyl Ph ketone 2, bis(2,2,6,6-tetramethyl-4-piperidyl) sabacate 0.6, pentaerythritol tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate] 0.12, and 2-hydroxy-4-methoxybenzophenone 0.2 part was dip-coated on a transparent polycarbonate plate and UV-irradiated to give a coating with the above desirable properties.

L5 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1981:482575 CAPLUS
 DOCUMENT NUMBER: 95:82575
 TITLE: Curable esterified alkyd resins
 INVENTOR(S): Ihida, Kazuyoshi
 PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan
 SOURCE: U.S., 11 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4248997	A	19810203	US 1979-61576	19790730 <--
GB 2055389	A	19810304	GB 1979-26332	19790727 <--
GB 2055389	B2	19830622		

PRIORITY APPLN. INFO.: US 1979-61576 19790730
 AB A cyclopentadiene compound was treated with a OH group-containing unsatd. monomer and then with ≥ 1 **polyols** and a **polycarboxylic acid**, and the resulting OH group-containing alkyd was esterified with an α, β -unsatd. carboxylic acid to give curable resins useful for coatings and inks. Thus, 96% dicyclopentadiene 660, allyl alc. 300, and xylenes 500 g were autoclaved at 260° for 5 h and concentrated in vacuo at 200° to give 750 g resinous product which (45 parts) was heated with 29 parts phthalic **anhydride** and 26 parts trimethylolpropane at 240° for 7.5 h to give a OH group-containing alkyd. The alkyd 80, **acrylic acid** 20, p-toluenesulfonic acid 1, and hydroquinone 0.1 part were refluxed in 2:1 cyclohexane-iso-BuCOME for 15 h and concentrated at 115° to give a curable resin with acid value 18.3.

L5 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1975:570920 CAPLUS
 DOCUMENT NUMBER: 83:170920
 TITLE: Photosensitive polyester compositions for printing plates
 INVENTOR(S): Ide, Fumio
 PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 50071404	A2	19750613	JP 1973-119947	19731026 <--
JP 55044931	B4	19801114		

PRIORITY APPLN. INFO.: JP 1973-119947 19731026
 AB **Polyols** are reacted (condensation-polymerization) with **polycarboxylic acid** compns. containing ≥ 10 mole % unsatd. carboxylic acid derivs. of general formula $\text{CH}_2:\text{C}(\text{CO}_2\text{R}_1)\text{CH}_2\text{CH}_2\text{CHMeCO}_2\text{R}_1$ [I; R1 = H, lower alkyl] to give unsatd. polyesters, the resulting polyesters are further reacted with unsatd.

als. of a general formula $\text{CH}_2:\text{CR}_2\text{CO}_2\text{Q}_1\text{OH}$ [II; $\text{R}_2 = \text{H, Me}$; $\text{Q}_1 = \text{aliphatic, alicyclic, or aromatic moieties which may contain ether bonding within the main chain}$], **acrylic acid**, methacrylic acid, or unsatd. carboxylic acids of a formula $\text{CH}_2:\text{CR}_3\text{CO}_2\text{Q}_2\text{CO}_2\text{Z}(\text{CO}_2\text{H})_n$ [III; $\text{R}_3 = \text{H, Me}$; $\text{Q}_2 = \text{aliphatic, alicyclic, or aromatic moieties which may contain ether bonding within the main chain}$; $\text{Z} = \text{aliphatic, alicyclic, or aromatic moieties}$; $n = 1, 2$] to give diacryloyl(or dimethacryloyl)-modified unsatd. polyesters having repetitive unit of structure $[\text{O}_2\text{CC}(\text{CH}_2)\text{C}_2\text{H}_4\text{C}(\text{Me})\text{HCO}_2]$, and the unsatd. polyesters are mixed with photosensitizers and other unsatd. compds., which crosslink the unsatd. polyester, to give photosensitive imaging compns. The photosensitive compns. are useful for preparing relief printing plates. Thus, methacrylic acid dimer 0.7, phthalic anhydride 0.3, and tetraethylene glycol 1.0 mole were reacted 5 hr at 150° under N to give unsatd. polyester (acid value 60), the polyester 87.5 g was reacted 3 hr with hydroxyethyl methacrylate 12.5 g at 160° under N to give a modified unsatd. polyester (acid value 35), the modified unsatd. polyester 70 g was then mixed with ethylene glycol methacrylate hydrogen maleate 30, benzoin methyl ether 1.7 g, and hydroquinone 20 mg, and the mixture coated on an Al plate precoated with an adhesive layer to give a photosensitive plate. The photosensitive plate was covered with a polyester film, imagewise exposed using a 20 W chemical lamp at 5 cm for 2 min, and developed with aqueous 0.5% NaOH solution to give a relief printing plate; the relief images did not swell in any kind of solvent and had good strength (150 kg/cm²) and elongation 100%.

L5 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1969:462372 CAPLUS
 DOCUMENT NUMBER: 71:62372
 TITLE: Vinylation of fatty substances
 INVENTOR(S): Taft, David D.
 PATENT ASSIGNEE(S): Ashland Oil and Refining Co.
 SOURCE: U.S., 5 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3453224	A	19690701	US 1967-639037	19670517 <--

PRIORITY APPLN. INFO.: US 1967-639037 19670517

AB Alkyd resins prepared from a polyol, a **polycarboxylic acid**, and an unsatd. fatty acid or glycerol ester are treated at $320\text{--}450^\circ\text{F}$. and >1 atmospheric with vinyl monomer mixts. that contain ≥ 5 weight % vinyl carboxylic acid. The vinylated alkyd resins are then neutralized with Et_3N to yield water-dispersible vinylated esterification products that have lower viscosity and are produced more rapidly than those from previous processes. Thus, 800 g. linseed oil (I) and 73.7 g. pentaerythritol (II) were alcoholized in the presence of litharge at 445°F . for 1-2 hrs., cooled to 325°F ., treated with 143.8 g. phthalic **anhydride** (III), and heated to 480°F . until an acid value 6-10 was reached to yield an alkyd resin (IV) that had viscosity 7.3 stokes at 100% nonvolatile content. A solution containing 320 g. IV in 240 g. 2-ethoxyethanol was heated to 375°F . in a sealed reactor, styrene (V) 342.4, Me methacrylate (VI) 80, **acrylic acid** (VII) 57.6, and tert-Bu₂O₂ 8 g. were added with stirring over a 1-hr. period. After an addnl. 1.5 hrs., 2 g. tert-Bu₂O₂ was added, and the mixture was heated for 1.5 hrs. at $340\text{--}60^\circ\text{F}$. to yield a vinylated alkyd resin that had solids content 79.7%, viscosity 62 stokes, acid value 31.8%. The resin was neutralized to pH 9.6 with Et_3N , and diluted with H₂O to solids content 23.7% and viscosity 940 cp. A similar vinylation reaction at atmospheric conditions yielded a hazy viscous gel that had viscosity $>400,000$ cp., solids 76.1%, and was not dispersible in H₂O at 68°F . Other alkyd resins were similarly prepared by treating various mixts. of I, tung oil, soybean oil, II, and glycerol with III. Use of phthalic and isophthalic acids was claimed. These alkyd resins, safflower oil, and linseed oil fatty acid were also vinylated with vinyltoluene and various mixts. of V, VI, VII,

and acrylonitrile. Vinylation with methacrylic acid or itaconic acid is claimed.

L5 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1966:491479 CAPLUS
DOCUMENT NUMBER: 65:91479
ORIGINAL REFERENCE NO.: 65:17148f-h
TITLE: Curing polyepoxides with carboxylic acids and metal oxides
INVENTOR(S): Mueller, Albert C.
PATENT ASSIGNEE(S): Shell Oil Co.
SOURCE: 7 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	US 3268477		19660823	US	19581223 <--
GI	For diagram(s), see printed CA Issue.				
AB	A resinified product is prepared by reaction of polyepoxide having >1 vicinal epoxy group with: (1) a polycarboxylic acid which is a half ester of a cyclic anhydride of formula I, in which R is a radical derived from a polycarboxylic acid which has had 2 of the CO ₂ H groups removed and a long-chain polyhydric alc. (mol. weight 400) whose OH groups have been esterified with 1 mole of the anhydride , leaving at least 2 free CO ₂ H groups; and (2) MgO, BaO, ZnO, or CaO. For example, 22 parts polyether (U.S. 2,633,458, CA 47, 7826h) was combined with 78 parts of the dicarboxylic acid obtained by reaction of maleic anhydride with polyethylene glycol, and 2 parts MgO and 200 parts NH ₄ ClO ₄ . The mixture was stirred and cured for 21 hrs. at 65° and 4 hrs. at 120°. The product was a hard, homogeneous casting having high tensile strength, good flexibility, and chemical resistance. They can be used to prepare solid propellants, pottings, castings, and laminates.				

L5 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1965:499553 CAPLUS
DOCUMENT NUMBER: 63:99553
ORIGINAL REFERENCE NO.: 63:18397g-h,18398a-b
TITLE: Curable epoxy resins
INVENTOR(S): McGary, Charles W., Jr.; Patrick, Charles T., Jr.
PATENT ASSIGNEE(S): Union Carbide Corp.
SOURCE: 10 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	GB 1002320		19650825	GB	<--
PRIORITY APPLN. INFO.:			US		19600824
AB	Resins are prepared that consist of a conjugated diene, a polycarboxylic acid and (or) polycarboxylic anhydride , and a polyol. These can be partially or completely cured by reaction of the ingredients. For example, a mixture of styrene 416, 1,3-butadiene 532, and PhMe 848 g. was passed through a tubular steel reactor at 250°. The reaction mixture was stripped of volatile matter under pressure. A solution of this copolymer (136 g.) in PhEt (272 g.) was mixed with 381 g. 23.6% peracetic acid solution in acetone during 1.5 hrs. The temperature rose to 39-40° and was maintained for 4.5 hrs. After standing at room temperature overnight, the mixture was heated to 40° for 2 hrs. and was freed of acetone and AcOH by codistn. with PhEt. The residue was isolated by stripping at 120° and 7 mm. The epoxidized 1,3-butadiene/styrene copolymer 3.1, maleic anhydride 0.75, and 1,2,6-hexanetriol 0.09 g. were placed in a test tube. The mixture was heated for 3 hrs. at 120°. Post curing took place at 160° during 6				

hrs. A hard, tough resin (Barcol hardness 25) was obtained. These resins can be used for coating, laminating, bonding, molding, casting, or encapsulating. They can be cured to bubble-free resins. These resins vary from soft to flexible to hard products depending on the proportion, functionality, and chain length of the components used. They are insol. in many organic solvents. The hard finishes can be polished.